AMENDMENTS TO THE CLAIMS

1-4. (Cancelled)

5. (Currently Amended) A polishing method comprising:

measuring a thickness of a film formed on a substrate;

inputting a desired thickness of a film formed on a substrate to be polished;

storing polishing rate data on at least two lately polished substrates ~~one past substrate~~ in a storage device;

calculating a polishing rate and an optimal polishing time based on the polishing rate data and the desired thickness by using a weighted average method which weights the polishing rate data on the at least two lately polished substrates ~~a lately polished substrate~~; and

polishing a subsequent substrate for the optimal polishing ~~time.~~ time,

wherein the weighted average method includes setting a weight coefficient for each lately polished substrate, and

wherein the weight coefficient for a most recently polished substrate of the at least two lately polished substrates is larger than the weight coefficient for a less recently polished substrate of the at least two lately polished substrates.

6. (Previously Presented) The polishing method as recited in claim 5, further comprising calibrating a measuring unit which performs said measuring at a predetermined frequency by using a calibration substrate having a known thickness of a film formed thereon.

7-23. (Cancelled)

24. (Previously Presented) The polishing method of claim 5, wherein polishing rate in the polishing rate data is calculated as film removed per unit time when polishing under a predetermined pressure.

25. (Currently Amended) The polishing method of claim 5, wherein the polishing rate data is obtained by measuring film thickness ~~of the at least one past substrate~~ before polishing, during polishing, and after polishing of the at least two lately polished substrates. ~~one past substrate.~~

26. (Previously Presented) The polishing method of claim 25, wherein polishing rate in the polishing rate data is calculated as film removed per unit time when polishing under a predetermined pressure.

27-30. (Cancelled)

31. (Currently Amended) A polishing method comprising:

measuring a thickness of a film formed on a substrate;

inputting a desired thickness of the film formed on the substrate;

storing polishing rate data on at least two lately polished substrates ~~one past substrate~~ in a storage device, the at least one past substrate being recently polished;

calculating a polishing rate and an optimal polishing time based on the polishing rate data and the desired thickness of the film formed on the substrate by using a weighted average

method which weights the polishing rate data on the at least two lately polished substrates; and ~~one past substrate;~~

polishing the substrate for the optimal polishing ~~time.~~ time,

wherein the weighted average method includes setting a weight coefficient for each lately polished substrate, and

wherein the weight coefficient for a most recently polished substrate of the at least two lately polished substrates is larger than the weight coefficient for a less recently polished substrate of the at least two lately polished substrates.

32. (Cancelled)

33. (Previously Presented) The polishing method of claim 31, wherein polishing rate in the polishing rate data is calculated as film removed per unit time when polishing under a predetermined pressure.

34. (Currently Amended) The polishing method of claim 31, ~~wherein the at least one past substrate includes at least two recently polished substrates; and~~

wherein said calculating the optimal polishing time includes calculating a margin based on a variation in the polishing rate between the at least two lately ~~recently~~ polished substrates.

35. (Currently Amended) The polishing method of claim 34, ~~claim 31,~~ wherein the margin is calculated by:

(i) (an amount of polishing) / (average polishing rate × 120%);

(ii) (an amount of polishing) / (maximum polishing rate in the past); or

(iii) (an amount of polishing × 80%) / (average polishing rate).

36. (Currently Amended) The polishing method of claim 31, wherein the polishing rate data is obtained by measuring film thickness of the at least one past substrate before polishing, during polishing, and after polishing of the at least two lately polished substrates. ~~one past substrate.~~

37. (New) The polishing method of claim 31, wherein the at least two lately polished substrates are polished consecutively,

wherein the weight coefficient for each lately polished substrate is larger than the weight coefficient for the preceding lately polished substrate.

38. (New) A polishing method comprising:

polishing a first substrate;

after polishing the first substrate, storing polishing rate data on the first substrate in a storage device;

after polishing the first substrate, polishing a second substrate;

after polishing the second substrate, storing polishing rate data on the second substrate in the storage device;

measuring a thickness of a film formed on a third substrate;

inputting a desired thickness of the film formed on the third substrate;

calculating a polishing rate and an optimal polishing time for the third substrate based on the polishing rate data on the first substrate, the polishing rate data on the second substrate, and

the desired thickness of the film formed on the third substrate by using a weighted average method in which the polishing rate data on the second substrate is weighted more heavily than the polishing rate data on the first substrate; and

polishing the third substrate for the optimal polishing time.

39. (New) The polishing method of claim 38, wherein the at least two lately polished substrates are polished consecutively,

wherein the weight coefficient for each lately polished substrate is larger than the weight coefficient for the preceding lately polished substrate.

40. (New) The polishing method of claim 38, wherein the weighted average method is calculated as

$$X_0 = (AX_1 + BX_2)/(A+B)$$

where X_0 is the polishing rate, X_1 is the polishing rate data on the first substrate, X_2 is the polishing rate data on the second substrate, A is a weight coefficient for the polishing rate data on the first substrate, and B is a weight coefficient for the polishing rate data on the second substrate; and

wherein $B > A$.

41. (New) The polishing method of claim 40, wherein optimal polishing time is calculated as

$$T_o = 1/(X_0 * Z)$$

where T_o is the optimal polishing time, X_0 is the polishing rate, and Z is the difference between the measured thickness and the desired thickness of the film formed on the third substrate.

42. (New) The polishing method of claim 39, wherein optimal polishing time is calculated as

$$T_o = 1/(X_0 * Z)$$

where T_o is the optimal polishing time, X_0 is the polishing rate, and Z is the difference between the measured thickness and the desired thickness of the film formed on the third substrate.

43. (New) The polishing method of claim 38, wherein polishing rate in the polishing rate data on the first substrate and the polishing rate data on the second substrate is calculated as film removed per unit time when polishing under a predetermined pressure.

44. (New) The polishing method of claim 38, wherein said calculating the optimal polishing time includes calculating a margin based on a variation in the polishing rate between the at least two lately polished substrates.

45. (New) The polishing method of claim 44, wherein the margin is calculated by:

(i) (an amount of polishing) / (average polishing rate × 120%);

(ii) (an amount of polishing) / (maximum polishing rate in the past); or

(iii) (an amount of polishing × 80%) / (average polishing rate).